

AMENDMENTS TO THE CLAIMS

1-6. (Canceled)

7. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic test as defined in Claim 1, wherein testing, the measurement apparatus comprising:

 a solution mixing unit for mixing an eluent and a quinone solution, the solution mixing unit including

 a main tube for guiding the quinone solution, and

 a side tube for guiding the eluent, the side tube penetrating the main tube and being disposed such that an aperture end of the side tube extends parallel with the main tube;

 a separation system for supplying the eluent to the solution mixing unit, said separation system including

 an eluent tank in which the eluent used for acid separation is stored,

 at least one pump for sending the eluent,

 a sample injection unit for injecting a sample into the eluent, and

 an acid separation column for separating short-chain fatty acids included in the sample that is injected from the sample injection unit;

 a solution sending system for supplying the quinone solution to the solution mixing unit, the solution sending system including

 a solution tank in which the quinone solution containing quinone and supporting electrolyte is stored, and

 at least one pump for sending the quinone solution; and

 an acid degree measurement unit for measuring the acid degrees of the short-chain fatty

acids included in a mixture solution that flows from the solution mixing unit;

wherein the flow rate of the eluent to the acid separation column is

7.96mm/min~60.2mm/min, and

wherein said acid degree measurement unit continuously measures the acid degrees of the short-chain fatty acids included in the sample, which are successively mixed into the quinone solution by the solution mixing unit.

8. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic test as defined in Claim 1, wherein testing, the measurement apparatus comprising:

a solution mixing unit for mixing an eluent and a quinone solution, the solution mixing unit including

a main tube for guiding the quinone solution, and

a side tube for guiding the eluent, the side tube penetrating the main tube and being disposed such that an aperture end of the side tube extends parallel with the main tube;

a separation system for supplying the eluent to the solution mixing unit, said separation system including

an eluent tank in which the eluent used for acid separation is stored,

at least one pump for sending the eluent,

a sample injection unit for injecting a sample into the eluent, and

an acid separation column for separating short-chain fatty acids included in the sample that is injected from the sample injection unit;

a solution sending system for supplying the quinone solution to the solution mixing unit, the solution sending system including

a solution tank in which the quinone solution containing quinone and supporting

electrolyte is stored, and

at least one pump for sending the quinone solution; and

an acid degree measurement unit for measuring the acid degrees of the short-chain fatty acids included in a mixture solution that flows from the solution mixing unit;

wherein the flow rate of the quinone solution is 891mm/min~5102mm/min, and

wherein said acid degree measurement unit continuously measures the acid degrees of the short-chain fatty acids included in the sample, which are successively mixed into the quinone solution by the solution mixing unit.

9. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic ~~test~~ testing as defined in ~~Claim 1~~ claim 7, wherein

said eluent is a water solution containing 0.1mM of perchloric acid.

10. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic ~~test~~ testing as defined in ~~Claim 1~~ claim 7, wherein

said quinone solution is an ethanol solution containing 3mM~6mM of quinone and 50mM~150mM of lithium perchlorate.

11. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic ~~test~~ testing as defined in ~~Claim 1~~ claim 7, wherein

said sample is human stool containing six kinds of short-chain fatty acids which are lactic acid, acetic acid, propionic acid, butyric acid, isovaleric acid, and valeric acid.

12. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and

prognostic ~~test~~ testing as defined in ~~Claim 1~~ claim 7, wherein

the acid degree measurement unit enables measurement up to an acid measurement sensitivity of 5 μ M~2mM.

13. (Currently Amended) A measurement apparatus for ulcerative colitis diagnosis and prognostic ~~test~~ as defined in Claim 1, wherein testing, the measurement apparatus comprising:-

a solution mixing unit for mixing an eluent and a quinone solution, the solution mixing unit including

a main tube for guiding the quinone solution, and

a side tube for guiding the eluent, the side tube penetrating the main tube and being disposed such that an aperture end of the side tube extends parallel with the main tube;

a separation system for supplying the eluent to the solution mixing unit, said separation system including

an eluent tank in which the eluent used for acid separation is stored,

at least one pump for sending the eluent,

a sample injection unit for injecting a sample into the eluent, and

an acid separation column for separating short-chain fatty acids included in the sample that is injected from the sample injection unit;

a solution sending system for supplying the quinone solution to the solution mixing unit, the solution sending system including

a solution tank in which the quinone solution containing quinone and supporting electrolyte is stored, and

at least one pump for sending the quinone solution; and

an acid degree measurement unit for measuring the acid degrees of the short-chain fatty

acids included in a mixture solution that flows from the solution mixing unit; and

wherein the length of a flow path provided between the solution mixing unit and the acid degree measurement unit is 20cm~80cm, and

wherein said acid degree measurement unit continuously measures the acid degrees of the short-chain fatty acids included in the sample, which are successively mixed into the quinone solution by the solution mixing unit.

14. A measurement method for use in ulcerative colitis diagnosis and prognostic-test testing, the measurement comprising:

an acid separation-~~step of~~ operation including

injecting a measurement sample into an eluent that flows into an acid separation column at a ~~constant~~ flow rate of 7.96 mm/min to 60.2 mm/min, and

separating short-chain fatty acids included in the measurement sample ~~by~~ with the acid separation column;

a solution mixing-~~step of~~ operation including

forming a flow path by mixing a first flow and a second flow, the first flow being the eluent flowing in a side tube, and the second flow being a quinone solution flowing in a main tube, the eluent flowing in the side tube being discharged in parallel to the quinone solution flowing in the main tube to evenly diffuse the eluent into the quinone solution, and

mixing the eluent that is sent from the acid separation column into a quinone solution that contains quinone and supporting electrolyte and is sent at a ~~constant~~ flow rate of 891 mm/min to 5102 mm/min, and sending the mixed solution to a flow path having a length of 20 cm to 80 cm; and

an acid degree measurement-~~step of~~ operation including

continuously measuring the acid degrees of the short-chain fatty acids in the mixture resultant which is produced by the measurement sample, being successively mixed into the quinone solution in the liquid mixing step.

15. (Canceled)

16. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 8, wherein

said eluent is a water solution containing 0.1mM of perchloric acid.

17. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 8, wherein

said quinone solution is an ethanol solution containing 3mM~6mM of quinone and 50mM~150mM of lithium perchlorate.

18. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 8, wherein

said sample is human stool containing six kinds of short-chain fatty acids which are lactic acid, acetic acid, propionic acid, butyric acid, isovaleric acid, and valeric acid.

19. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 8, wherein

the acid degree measurement unit enables measurement up to an acid measurement sensitivity of 5 μ M~2mM.

20. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 13, wherein

said eluent is a water solution containing 0.1mM of perchloric acid.

21. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 13, wherein

said quinone solution is an ethanol solution containing 3mM~6mM of quinone and 50mM~150mM of lithium perchlorate.

22. (New) A measurement apparatus for ulcerative colitis diagnosis and prognostic testing as defined in claim 13, wherein

said sample is human stool containing six kinds of short-chain fatty acids which are lactic acid, acetic acid, propionic acid, butyric acid, isovaleric acid, and valeric acid.